

REMARKS

A. Introduction

In the Office Action mailed May 27, 2004, the drawings were objected to and claims 1-8 were rejected based upon prior art.

In response, the drawings are amended, claim 1 is cancelled, claims 2-8 are amended, new claims 9 -13 are added, and remarks are provided.

B. Objections to the Drawings

The Examiner has objected to the drawings as failing to comply with 37 CFR §1.84(p)(5) as they do not include reference numerals 502a, 121, and 614 mentioned in the description. Further, the Examiner has objected to the drawings as failing to comply with 37 CFR §1.84(p)(5) as reference numeral 502b is not mentioned in the description.

In order to overcome the above objections, Figure 3 has been amended so that reference numeral 121a is now reference numeral 121 as being consistent with the description provided on page 9. Figure 6 has been amended so that reference numeral 502b is now reference numeral 502a as being consistent with the description provided on page 1. Finally, Figure 7 has been amended to delete the reference numeral 614.

The Applicant requests the Examiner to enter the above-mentioned amendments to the drawings in order to overcome the Examiner's objections to the drawings.

C. Rejection of Claims 1-7 under 35 U.S.C. § 102(b) over Takashi -

Claims 1-7 are rejected as being anticipated by Takashi (Japanese Reference 2000-348562).

In this Response, claim 1 is canceled, claim 2 is amended to generally incorporate the subject matter of claim 1, and is further amended, and claims 3-7 are amended for clarity and consistency.

As noted in the "Background of the Invention" of the present application, and as widely-known, keyboard keys usually move in a vertical direction. See also Figs. 6 and 7, and reference "KS" of the present application. However, keyboards for low profile laptops require a shorter vertical distance of the movement of the key. But, merely decreasing the vertical

distance that a key travels causes ergonomic issues, since the user of the keyboard senses a different key travel distance than what they have been used to. The art has attempted to both accommodate the low profile of a laptop keyboard and address the ergonomic issues by making the key move in an oblique direction, i.e., other than the vertical, but covering substantially the same distance as the conventional vertically-moving key.

Takashi, provides such an obliquely moving key using the following structure:

[F]irst projections 2e and 3e, formed, at the coupling part 2b as one end of a first 2 and a second lever 3, are supported rotatably by support parts 1a and 1b formed on a key top 1, and second projections 2f and 3f formed at the other ends of the first 2 and the second lever 3 are held rotatably by a holding part 7a formed on a base board 7, and by using the first projections 2e and 3e at the other ends as a fulcrum, the first 2 and the second lever 3 are tilted in the same direction by pressing the key top 1 and its disengagement, and the key top 1 can be elevated and lowered between the elevating and lowering-position.

See Abstract of Takashi.

Thus, Takashi uses separate, unconnected, loosely pivoted levers 2, 3, that allow a key top to move in an oblique direction relative to the vertical. However, due to this structure, the key top of Takashi has a tendency to tilt relative to the base of the keyboard when pressure is applied to actuate the key. This tilting causes several problems. First, the person using the keyboard senses the tilting, and this causes an uncomfortable or ergonomically undesirable sensation. Also, the incline of the key top may cause contact failure between the contact and switch part and resultant failure of the keying function.

In contrast, and as described in the specification of the present application, in reference to Figure 2, with the present invention a "...coupling member 120 connects the first and second members 111 and 115 to each other to synchronize their rotational movements with each other, and serves to maintain the horizontalness of a top surface of the key 170, i.e., the key top". (Page 9, lines 8-10). Further a plurality of keys is disclosed having a "moving mechanism for descending and ascending each key in a direction different from a vertical direction and for maintaining an orientation of the key top, and a forcing member for forcing the moving

mechanism to return the key to an original state". (Page 3, lines 3-6). Moreover, the specification discloses that "the key top descends parallel to the base 140". (Page 13, line 25). By maintaining this parallel orientation, the ergonomics issue is addressed, and reliable contact is assured.

Further, the description compares to a structure like Takashi's which "...does not include the coupling member 120, the coupling member 120 may synchronize the first and second members 111 and 115 certainly, preventing the inclination of the key top". (Page 10, lines 5-7).

There is no synchronization in the movement of the first 2 and second 3 levers of Takashi because there is no "coupling member" connecting these two levers. The result is that the levers in Takashi rotatably move in an oblique direction without maintaining a parallel orientation of the key top 1 with respect to the base board 7 during operation.

Even though Takashi includes what is termed a "coupling part 2b", it does not connect the two levers 2 and 3 to allow for synchronized movement of the levers during operation.

Based on the above, it is respectfully submitted that the present invention as recited by independent claim 2 is allowable. As claims 3-7 depend on currently amended independent claim 2, dependent claims 3-7 should also be allowed.

D. Rejection of Claim 8 under 35 U.S.C. § 103(a) over Takashi in view of Sato et al. -

Claim 8 is rejected as being unpatentable over Takashi in view of Sato et al. (U.S. Patent 6,371,671). Takashi is relied upon as in the above rejection for disclosing the keyboard, and Sato et al. is cited for showing the display.

Sato et al. also disclose a "...display means for displaying the letters, symbols, and others..." (Col. 3, lines 23-24).

The above comments regarding the inability of Takashi to anticipate or render obvious the invention recited by claims 2-7 are expressly incorporated herein. Further, claim 8 has been amended to incorporate generally the amendments to claim 2 discussed above, and further recites a display used with the keyboard.

While Sato et al. does show a display device, it fails to otherwise compensate for the incomplete disclosure/teaching of Takashi in regard to the moving mechanism recited in claim

8, including a coupling member to synchronously move first and second rotatable members to cause the key to move in a direction different than the vertical. As a matter of fact, Sato et al. relates to a key that moves only in the vertical direction, so it would not be applied by one of ordinary skill in trying to overcome the disadvantageous tilting oblique movement of the key of Takashi.

E. New Claims 9-13

Claims 9 and 10 have been newly added to recite some subject matter previously recited in claim 3. Further, based on the discussion above, as new claims 9 and 10 depend from amended independent claim 2, and since claim 2 is now believed to be in allowable condition, both claims 9 and 10 should be allowed over Takashi.

Claims 11-13 have been added to claim additional features of the coupling member as supported by the specification on page 8, lines 24-26 and page 9, lines 1-7.

CONCLUSION

It is the Applicant's position that the present invention is not anticipated by Takashi and is not made obvious over a combination of Takashi and Sato et al. because the references either alone or collectively fail to teach or describe the patentably distinguishing features of the present invention as discussed above.

Withdrawal of the foregoing rejections is respectfully requested. Further, allowance of claims 2-13 is respectfully requested and an early action to this effect is courteously solicited.

Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

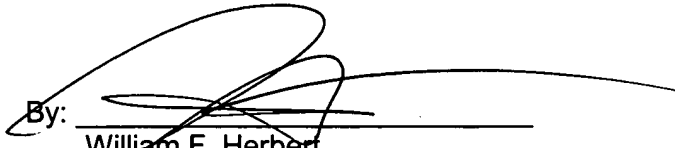
Serial No. 10/629,738
Response Dated September 27, 2004
Reply to Office Action of May 27, 2004
Page 12

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

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Serial No. 10/629,738
Response Dated September 27, 2004
Reply to Office Action of May 27, 2004
Page 3

AMENDMENTS TO THE DRAWINGS:

The attached drawings include changes to Figures 3, 6, and 7. In particular, Figures 3 and 6 have been amended to correct reference numerals and Figure 7 has been amended to delete a reference numeral.

The sheets containing Figures 3, 6, and 7 replace the original sheets including Figures 3, 6, and 7. Based on the Examiner's comments, Figures 3, 6, and 7 have been amended to overcome the Examiner's objections to the drawings.

For the convenience of the Examiner, annotated sheets showing the changes made are attached. Approval of these changes to the drawings is respectfully requested.



APPLN NO.: 10/629,738
Amdt. Dated: September 27, 2004
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ANNOTATED SHEET SHOWING CHANGES

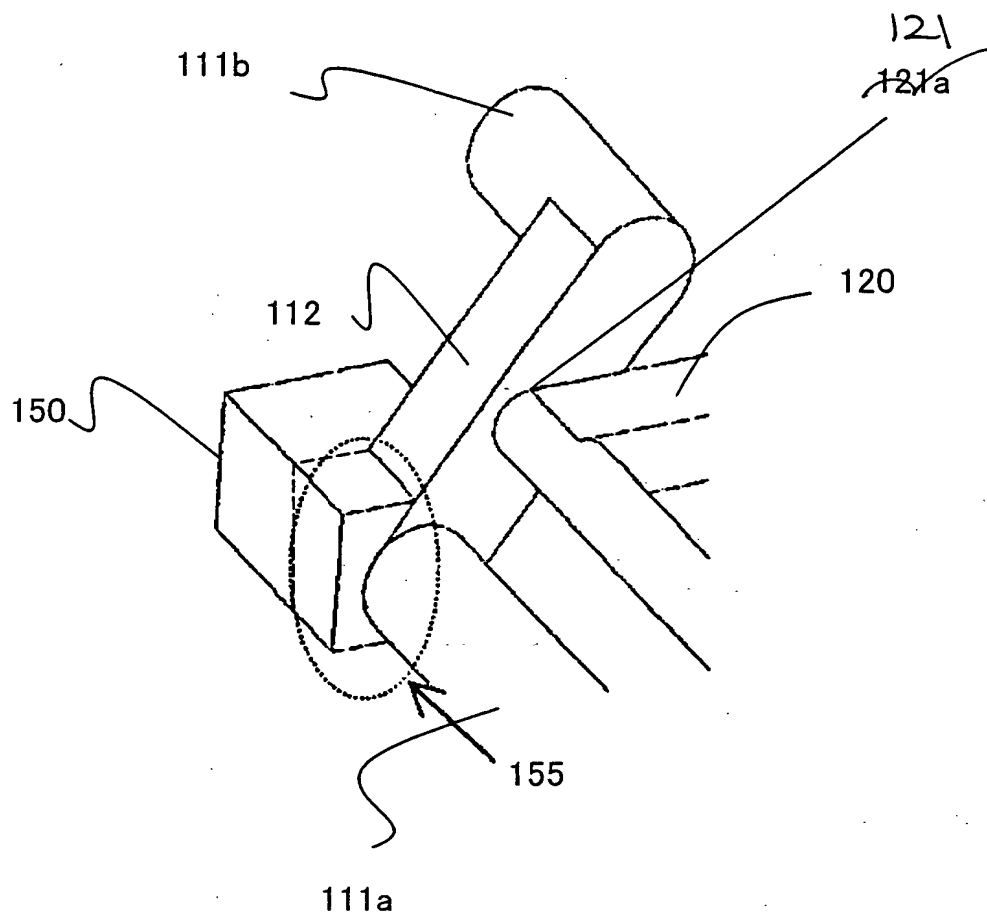
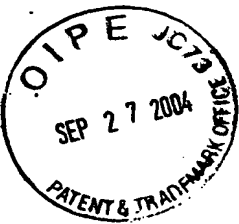


FIG. 3



APPLN NO.: 10/629,738
Amdt. Dated: September 27, 2004
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PRIOR ART

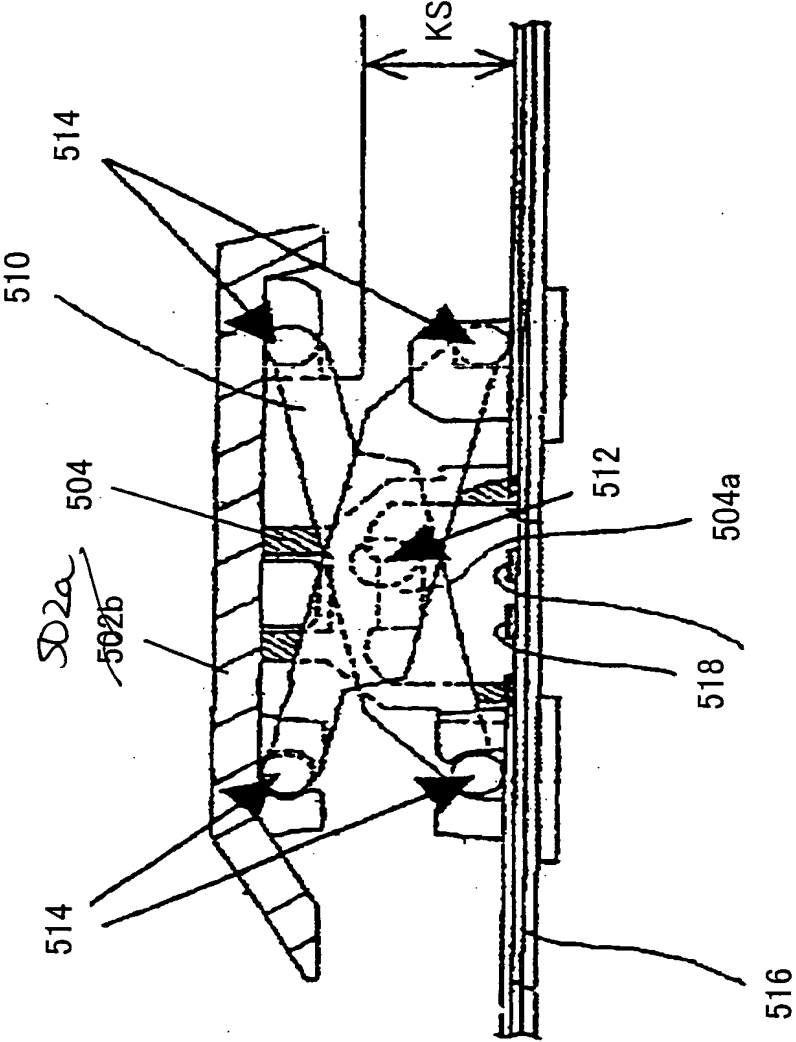


FIG. 6



APPLN NO.: 10/629,738
Amdt. Dated: September 27, 2004
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PRIOR ART

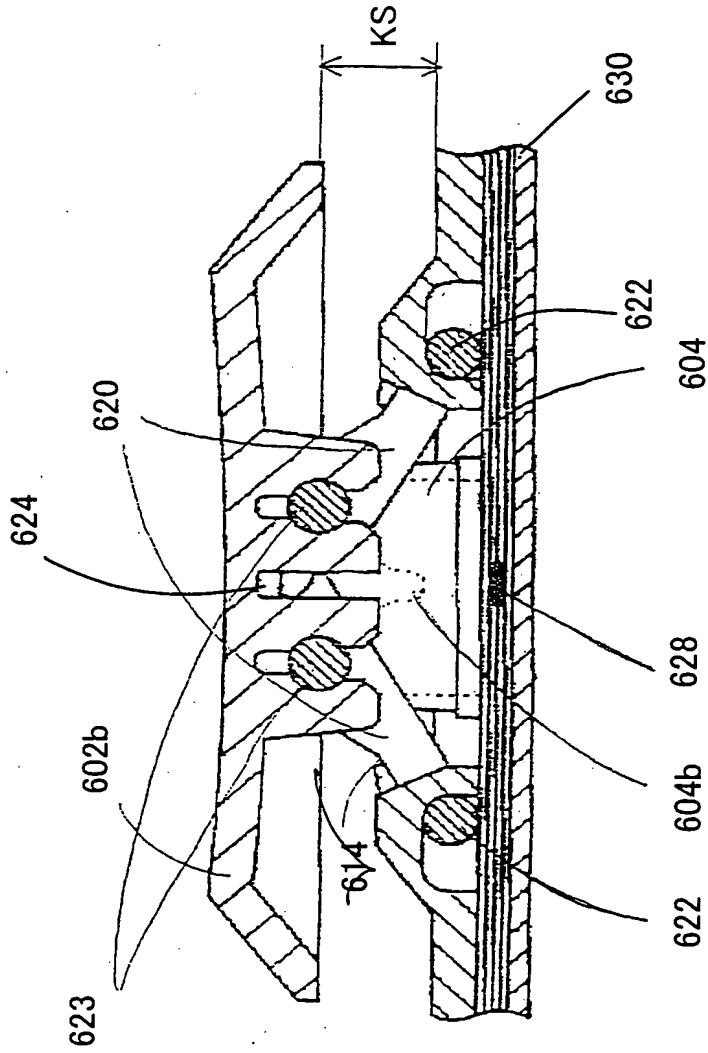


FIG. 7